



HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TX 77054  
(713) 660-0901

**Trace Analysis, Inc.**

Certificate of Analysis Number:

**07010714**

<b><u>Report To:</u></b>  Trace Analysis, Inc. Nell Green 6701 Aberdeen Avenue Suite 9 Lubbock TX 79424- ph: (806) 794-1296      fax:	<b><u>Project Name:</u></b> Trace Analysis <b><u>Site:</u></b> Lubbock, TX <b><u>Site Address:</u></b>  <b><u>PO Number:</u></b>  <b><u>State:</u></b> Texas <b><u>State Cert. No.:</u></b> T104704205-06-TX <b><u>Date Reported:</u></b> 1/22/2007
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This Report Contains A Total Of 14 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

1/23/2007

Date

Test results meet all requirements of NELAC, unless specified in the narrative.



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Case Narrative for:  
**Trace Analysis, Inc.**

Certificate of Analysis Number:  
**07010714**

<b>Report To:</b>  Trace Analysis, Inc. Nell Green 6701 Aberdeen Avenue Suite 9 Lubbock TX 79424- ph: (806) 794-1296      fax:	<b>Project Name:</b> Trace Analysis <b>Site:</b> Lubbock, TX <b>Site Address:</b>  <b>PO Number:</b> <b>State:</b> Texas <b>State Cert. No.:</b> T104704205-06-TX <b>Date Reported:</b> 1/22/2007
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Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg/kg-dry " or " ug/kg-dry " ).

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Erica Cardenas  
Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

07010714 Page 1

1/23/2007

Date



HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TX 77054  
(713) 660-0901

# Trace Analysis, Inc.

Certificate of Analysis Number:

**07010714**

**Report To:** Trace Analysis, Inc.  
Neil Green  
6701 Aberdeen Avenue  
Suite 9  
Lubbock  
TX  
79424-  
ph: (806) 794-1296

fax: (806) 794-1298

**Project Name:** Trace Analysis

**Site:** Lubbock, TX

**Site Address:**

**PO Number:**

**State:** Texas

**State Cert. No.:** T104704205-06-TX

**Date Reported:** 1/22/2007

**Fax To:**

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
113751	07010714-01	Water	1/10/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>
113753	07010714-02	Water	1/10/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>
113763	07010714-03	Water	1/10/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>
113765	07010714-04	Water	1/11/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>
113767	07010714-05	Water	1/11/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>
113770	07010714-06	Water	1/11/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>
113772	07010714-07	Water	1/11/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>
113774	07010714-08	Water	1/11/2007	1/16/2007 10:00:00 AM		<input type="checkbox"/>

Erica Cardenas  
Project Manager

1/23/2007

Date

Joel Grice  
Laboratory Director

Ted Yen  
Quality Assurance Officer



HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TX 77054  
(713) 660-0901

Client Sample ID: 113751

Collected: 01/10/2007 0:00

SPL Sample ID: 07010714-01

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>SEMIVOLATILE HYDROCARBONS - GLYCOL</b>				<b>MCL</b>	<b>SW8015B</b>	<b>Units: mg/L</b>	
Ethylene Glycol	ND		20	1	01/18/07 16:53	MNR	3637791
Surr: Isobutanol	114		% 50-150	1	01/18/07 16:53	MNR	3637791

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
D - Surrogate Recovery Unreportable due to Dilution  
MI - Matrix Interference



HOUSTON LABORATORY  
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Client Sample ID: 113753

Collected: 01/10/2007 0:00

SPL Sample ID: 07010714-02

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE HYDROCARBONS - GLYCOL				MCL	SW8015B	Units: mg/L	
Ethylene Glycol	ND		20	1	01/18/07 17:16	MNR	3637792
Surr: Isobutanol	113		% 50-150	1	01/18/07 17:16	MNR	3637792

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
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HOUSTON LABORATORY  
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Client Sample ID: 113763

Collected: 01/10/2007 0:00

SPL Sample ID: 07010714-03

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>SEMIVOLATILE HYDROCARBONS - GLYCOL</b>				<b>MCL</b>	<b>SW8015B</b>	<b>Units: mg/L</b>	
Ethylene Glycol	ND		20	1	01/18/07 17:40	MNR	3637793
Surr: Isobutanol	114		% 50-150	1	01/18/07 17:40	MNR	3637793

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
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HOUSTON LABORATORY  
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(713) 660-0901

Client Sample ID: 113765

Collected: 01/11/2007 0:00

SPL Sample ID: 07010714-04

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>SEMIVOLATILE HYDROCARBONS - GLYCOL</b>				<b>MCL</b>	<b>SW8015B</b>	<b>Units: mg/L</b>	
Ethylene Glycol	31		20	1	01/18/07 18:26	MNR	3637795
Surr: Isobutanol	115		% 50-150	1	01/18/07 18:26	MNR	3637795

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
D - Surrogate Recovery Unreportable due to Dilution  
MI - Matrix Interference



HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
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(713) 660-0901

Client Sample ID: 113767

Collected: 01/11/2007 0:00

SPL Sample ID: 07010714-05

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>SEMIVOLATILE HYDROCARBONS - GLYCOL</b>				<b>MCL</b>	<b>SW8015B</b>	<b>Units: mg/L</b>	
Ethylene Glycol	ND		20	1	01/18/07 18:50	MNR	3637796
Surr: Isobutanol	115		% 50-150	1	01/18/07 18:50	MNR	3637796

**Qualifiers:**  
ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
D - Surrogate Recovery Unreportable due to Dilution  
MI - Matrix Interference





HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TX 77054  
(713) 660-0901

Client Sample ID: 113770

Collected: 01/11/2007 0:00

SPL Sample ID: 07010714-06

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE HYDROCARBONS - GLYCOL				MCL	SW8015B	Units: mg/L	
Ethylene Glycol	ND		20	1	01/18/07 19:13	MNR	3637797
Surr: Isobutanol	112		% 50-150	1	01/18/07 19:13	MNR	3637797

**Qualifiers:**  
ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
D - Surrogate Recovery Unreportable due to Dilution  
MI - Matrix Interference



HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
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Client Sample ID: 113772

Collected: 01/11/2007 0:00

SPL Sample ID: 07010714-07

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
<b>SEMIVOLATILE HYDROCARBONS - GLYCOL</b>				<b>MCL</b>	<b>SW8015B</b>	<b>Units: mg/L</b>	
Ethylene Glycol	ND		20	1	01/18/07 19:37	MNR	3637798
Surr: Isobutanol	114		% 50-150	1	01/18/07 19:37	MNR	3637798

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
D - Surrogate Recovery Unreportable due to Dilution  
MI - Matrix Interference



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HOUSTON, TX 77054  
(713) 660-0901

Client Sample ID: 113774

Collected: 01/11/2007 0:00

SPL Sample ID: 07010714-08

Site: Lubbock, TX

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE HYDROCARBONS - GLYCOL			MCL	SW8015B	Units: mg/L		
Ethylene Glycol	ND		20	1	01/18/07 20:00	MNR	3637799
Surr: Isobutanol	114		% 50-150	1	01/18/07 20:00	MNR	3637799

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
\* - Surrogate Recovery Outside Advisable QC Limits  
J - Estimated Value between MDL and PQL  
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)  
D - Surrogate Recovery Unreportable due to Dilution  
MI - Matrix Interference

## *Quality Control Documentation*



## Quality Control Report

HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TX 77054  
(713) 660-0901

### Trace Analysis, Inc.

#### Trace Analysis

Analysis: Semivolatile Hydrocarbons - Glycol  
Method: SW8015B

WorkOrder: 07010714  
Lab Batch ID: R190001

#### Method Blank

RunID: HP\_T\_070118B-3637786 Units: mg/L  
Analysis Date: 01/18/2007 14:32 Analyst: MNR

Analyte	Result	Rep Limit
Ethylene Glycol	ND	10
Surr: Isobutanol	89.1	50-150

#### Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07010714-01A	113751
07010714-02A	113753
07010714-03A	113763
07010714-04A	113765
07010714-05A	113767
07010714-06A	113770
07010714-07A	113772
07010714-08A	113774

#### Laboratory Control Sample (LCS)

RunID: HP\_T\_070118B-3637785 Units: mg/L  
Analysis Date: 01/18/2007 14:09 Analyst: MNR

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Ethylene Glycol	400	418	105	61	135

#### Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07010584-01  
RunID: HP\_T\_070118B-3637788 Units: mg/L  
Analysis Date: 01/18/2007 15:43 Analyst: MNR

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Ethylene Glycol	ND	200	223	111	200	227	114	2.17	20	25	151

Qualifiers: ND/U - Not Detected at the Reporting Limit  
B - Analyte detected in the associated Method Blank  
J - Estimated value between MDL and PQL  
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.  
TNTC - Too numerous to count

MI - Matrix Interference  
D - Recovery Unreportable due to Dilution  
\* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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1/23/2007 1:03:34 PM

*Sample Receipt Checklist  
And  
Chain of Custody*



HOUSTON LABORATORY  
8880 INTERCHANGE DRIVE  
HOUSTON, TX 77054  
(713) 660-0901

**Sample Receipt Checklist**

Workorder:	07010714	Received By:	AE
Date and Time Received:	1/16/2007 10:00:00 AM	Carrier name:	UPS
Temperature:	3.5°C	Chilled by:	Water Ice

- |  |   |                             |  |
|--|---|-----------------------------|--|
| 1. Shipping container/cooler in good condition?              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>               |
| 2. Custody seals intact on shipping container/cooler?        | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>    |
| 3. Custody seals intact on sample bottles?                   | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>    |
| 4. Chain of custody present?                                 | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 5. Chain of custody signed when relinquished and received?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 6. Chain of custody agrees with sample labels?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 7. Samples in proper container/bottle?                       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 8. Sample containers intact?                                 | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 9. Sufficient sample volume for indicated test?              | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 10. All samples received within holding time?                | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 11. Container/Temp Blank temperature in compliance?          | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| 12. Water - VOA vials have zero headspace?                   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | VOA Vials Not Present <input type="checkbox"/>     |
| 13. Water - Preservation checked upon receipt (except VOA*)? | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/> |

\*VOA Preservation Checked After Sample Analysis

SPL Representative:   
Client Name Contacted:

Contact Date & Time:

Non Conformance Issues:   
Client Instructions:

[illegible]

2000

2018年 10月 20日

SECRET

45  
46  
47  
48

2017年12月31日

100

2000

10/25/2017

**Figure 1**

# Index

14-00000

223

Requested by	Name	Time	Received by	Date	Time
Requested by	J. L. Doolittle	7-18-07	Received by		
Requested by			Received by		
Requested by			Received by		

**THE UNIVERSITY OF CHICAGO**

# THEORY OF THE STATE

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RECEIVED 10/13/81; REVISED 12/15/81; ACCEPTED 1/15/82

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8. [www.igmp.org](http://www.igmp.org)

5. **Содержание**

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